

Search/History

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STN
USPATALL
11/29/2007

(FILE 'HOME' ENTERED AT 13:15:57 ON 29 NOV 2007)

FILE 'USPATFULL, USPATOLD, USPAT2' ENTERED AT 13:22:15 ON 29 NOV 2007

L1 89206 S (SINGLE OR MONO) (8A) (CRYSTAL#)
L2 24735 S (CZ OR CZOCHRALSKI)
L3 21675 S (PLURAL? OR MULTIP?) (8A) (HEATER#)
L4 868631 S (INDEPENDENT? OR SEPARAT?) (8A) (CONTROL? OR MANIPULAT? OR VARY
L5 14442 S (HEAT?(2W)SHIELD#)
L6 243382 S (CONTROL? OR VARY? OR MANIPULAT? OR ALTER? OR ADJUST? OR MODI
L7 10964 S L3 AND (VERTICAL?)

=> s l1 and l2 and l3 and l4 and l5 and l6 and l7

L8 2 L1 AND L2 AND L3 AND L4 AND L5 AND L6 AND L7

=> d l8 1-2 abs,bib

L8 ANSWER 1 OF 2 USPATFULL on STN

AB A semiconductor single crystal manufacturing apparatus which can manufacture a single crystal of high oxygen concentration to that of low oxygen concentration within a prescribed standard range of oxygen concentration, as a wafer material for semiconductor integrated circuits, with a high yield, is provided. Heat shields 20, 21 are provided in the entire annular area between respective adjacent heaters of the heaters 4a, 4b, 4c for heating the crucible 3 from the outside periphery side. By using the heat shields 20, 21 for localizing the respective heating regions for the heaters to actively control the temperature distribution for the crucible 3 and melt 8 in the crucible, a single crystal of high oxygen concentration to that of low oxygen concentration can be manufactured within a prescribed standard range of oxygen concentration with a high yield.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2007:246417 USPATFULL

TI Semiconductor Single Crystal Manufacturing Apparatus and Graphite Crucible

IN Iida, Tetsuhiro, Kanagawa, JAPAN

Noda, Akiko, Kanagawa, JAPAN

Tomiooka, Junsuke, Kanagawa, JAPAN

PA Komatsu Denshiki Kinzoku Kabushiki Kasei, Kanagawa, JAPAN, 254-0014 (non-U.S. corporation)

PI US 2007215038 A1 20070920

AI US 2005-594175 A1 20050331 (10)

WO 2005-JP6321 20050331

20060926 PCT 371 date

PRAI JP 2004-105341 20040331

DT Utility

FS APPLICATION

LREP WELSH & KATZ, LTD, 120 S RIVERSIDE PLAZA, 22ND FLOOR, CHICAGO, IL, 60606, US

CLMN Number of Claims: 10

ECL Exemplary Claim: 1-8

DRWN 7 Drawing Page(s)

LN.CNT 1069

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L8 ANSWER 2 OF 2 USPATFULL on STN

AB An improved system based on the Czochralski process for continuous growth of a single crystal ingot comprises a low aspect ratio, large diameter, and substantially flat crucible, including an optional weir surrounding the crystal. The low aspect ratio crucible substantially eliminates convection currents and

reduces oxygen content in a finished single crystal silicon ingot. A separate level controlled silicon pre-melting chamber provides a continuous source of molten silicon to the growth crucible advantageously eliminating the need for vertical travel and a crucible raising system during the crystal pulling process. A plurality of heaters beneath the crucible establish corresponding thermal zones across the melt. Thermal output of the heaters is individually controlled for providing an optimal thermal distribution across the melt and at the crystal/melt interface for improved crystal growth. Multiple crystal pulling chambers are provided for continuous processing and high throughput.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AN 2005:108177 USPATFULL

TI System for continuous growing of monocrystalline silicon

IN Bender, David L., Thousand Oaks, CA, UNITED STATES

PI ~~US 2005092236 A1 20050505~~

AI US 2004-789638 A1 20040227 (10)

PRAI US 2003-517124P 20031103 (60)

DT Utility

FS APPLICATION

LREP MICHAEL HETHERINGTON, P.O. BOX 61047, PALO ALTO, CA, 94306, US

CLMN Number of Claims: 17

ECL Exemplary Claim: 1

DRWN 9 Drawing Page(s)

LN.CNT 1031

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=>

Day : Thursday
Date: 11/29/2007

 **PALM INTRANET**

Time: 12:58:36

Inventor Name Search Result

Your Search was:

Last Name = IIDA

First Name = TETSUHIRO

Application#	Patent#	Status	Date Filed	Title	Inventor Name
08680522	5824152	150	07/09/1996	SEMICONDUCTOR SINGLE-CRYSTAL PULLING APPARATUS	IIDA, TETSUHIRO
08829412	5968260	250	03/31/1997	METHOD FOR FABRICATING A SINGLE CRYSTAL SEMICONDUCTOR	IIDA, TETSUHIRO
09297678	6228167	150	05/09/1999	SINGLE CRYSTAL PULLING APPARATUS	IIDA, TETSUHIRO
10512022	7226506	150	10/19/2004	SINGLE CRYSTAL SILICON PRODUCING METHOD, SINGLE CRYSTAL SILICON WAFER PRODUCING METHOD, SEED CRYSTAL FOR PRODUCING SINGLE CRYSTAL SILICON, SINGLE CRYSTAL SILICON INGOT, AND SINGLE CRYSTAL SILICON WAFER	IIDA, TETSUHIRO
10594175	Not Issued	30	09/26/2006	Semiconductor Single Crystal Manufacturing Apparatus and Graphite Crucible	IIDA, TETSUHIRO

Inventor Search Completed: No Records to Display.

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Day : Thursday
Date: 11/29/2007

 **PALM INTRANET**

Time: 12:58:52

Inventor Name Search Result

Your Search was:

Last Name = NODA

First Name = AKIKO

Application#	Patent#	Status	Date Filed	Title	Inventor Name
06330999	4515742	150	12/15/1981	CONTINUOUS INORGANIC FIBERS AND PROCESS FOR PRODUCTION THEREOF	NODA, AKIKO
06702649	4663229	150	02/19/1985	CONTINUOUS INORGANIC FIBERS AND PROCESS FOR PRODUCTION THEREOF	NODA, AKIKO
07913954	5338143	150	07/17/1992	CAR STORAGE APPARATUS FOR CAR CARRIER	NODA, AKIKO
10594175	Not Issued	30	09/26/2006	Semiconductor Single Crystal Manufacturing Apparatus and Graphite Crucible	NODA, AKIKO
11792664	Not Issued	19	01/01/0001	Semiconductor Single Crystal Production Device And Producing Method Therefor	NODA, AKIKO

Inventor Search Completed: No Records to Display.

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Day : Thursday
Date: 11/29/2007


PALM INTRANET

Time: 12:59:09

Inventor Name Search Result

Your Search was:

Last Name = TOMIOKA

First Name = JUNSUKE

Application#	Patent#	Status	Date Filed	Title	Inventor Name
07772928	5316742	150	10/08/1991	SINGLE CRYSTAL PULLING APPARATUS	TOMIOKA, JUNSUKE
08030356	5385115	150	03/17/1993	SEMICONDUCTOR WAFER HEAT TREATMENT METHOD	TOMIOKA, JUNSUKE
08170175	5441014	150	12/22/1993	APPARATUS FOR PULLING UP A SINGLE CRYSTAL	TOMIOKA, JUNSUKE
08829412	5968260	250	03/31/1997	METHOD FOR FABRICATING A SINGLE CRYSTAL SEMICONDUCTOR	TOMIOKA, JUNSUKE
08861658	Not Issued	164	05/22/1997	A METHOD OF FABRICATING A SEMICONDUCTOR SINGLE CRYSTAL AND A SINGLE CRYSTAL MATERIAL FABRICATED BY THE METHOD	TOMIOKA, JUNSUKE
08941309	6007625	150	09/30/1997	APPARATUS FOR MANUFACTURING SINGLE CRYSTAL	TOMIOKA, JUNSUKE
08956434	5938836	150	10/23/1997	APPARATUS AND METHOD FOR MANUFACTURING SEMICONDUCTOR SINGLE CRYSTALS	TOMIOKA, JUNSUKE
08976340	5968262	150	11/21/1997	METHOD OF FABRICATING SILICON SINGLE CRYSTALS	TOMIOKA, JUNSUKE
08985248	Not Issued	161	12/04/1997	APPARATUS FOR MANUFACTURING SINGLE CRYSTAL SILICON AND METHOD OF MANUFACTURING THEREOF	TOMIOKA, JUNSUKE
09014048	6056931	150	01/27/1998	SILICON WAFER FOR HYDROGEN HEAT TREATMENT AND METHOD	TOMIOKA, JUNSUKE

				FOR MANUFACTURING THE SAME	
<u>09015132</u>	<u>5885347</u>	150	01/29/1998	APPARATUS AND METHOD FOR LIFTING SINGLE CRYSTALS	TOMIOKA, JUNSUKE
<u>09025570</u>	Not Issued	161	02/18/1998	MANUFACTURING METHOD OF A SILICON WAFER AND THE SILICON WAFER	TOMIOKA, JUNSUKE
<u>09048302</u>	<u>5942033</u>	150	03/26/1998	APPARATUS AND METHOD FOR PULLING UP SINGLE CRYSTALS	TOMIOKA, JUNSUKE
<u>09088657</u>	<u>6099642</u>	150	06/02/1998	APPARATUS FOR PULLING UP SINGLE CRYSTALS AND SINGLE CRYSTAL CLAMPING DEVICE	TOMIOKA, JUNSUKE
<u>09121858</u>	<u>6042644</u>	150	07/24/1998	SINGLE CRYSTAL PULLING METHOD	TOMIOKA, JUNSUKE
<u>09160426</u>	Not Issued	161	09/24/1998	SEED-CRYSTAL HOLDING DEVICE USED IN A SINGLE-CRYSTAL MANUFACTURING APPARATUS AND METHOD FOR FABRICATING THE SAME	TOMIOKA, JUNSUKE
<u>09251399</u>	<u>6171393</u>	150	02/17/1999	SEED CRYSTAL AND METHOD OF MANUFACTURING SINGLE CRYSTAL	TOMIOKA, JUNSUKE
<u>09336906</u>	<u>6270575</u>	150	06/21/1999	APPARATUS AND A METHOD OF MANUFACTURING A CRYSTAL	TOMIOKA, JUNSUKE
<u>09396107</u>	<u>6179910</u>	150	09/14/1999	METHOD FOR MANUFACTURING SILICON SINGLE CRYSTAL AND WAFERS ADAPTED FOR PRODUCING SEMICONDUCTORS	TOMIOKA, JUNSUKE
<u>09410723</u>	<u>6315827</u>	150	09/30/1999	APPARATUS FOR PRODUCING SINGLE CRYSTAL	TOMIOKA, JUNSUKE
<u>09422711</u>	Not Issued	161	10/21/1999	METHOD FOR DETECTING THE INSERTION OF CLAMPING MEMBERS INTO THE SMALL-DIAMETER RECESS PORTION OF A SINGLE-CRYSTAL BODY AND DEVICE FOR LIFTING	TOMIOKA, JUNSUKE

				SINGLE-CRYSTAL BODIES	
09425019	6179911	150	10/25/1999	METHOD FOR MANUFACTURING SINGLE CRYSTAL	TOMIOKA, JUNSUKE
09544556	6273944	150	04/06/2000	Silicon wafer for hydrogen heat treatment and method for manufacturing the same	TOMIOKA, JUNSUKE
10512022	7226506	150	10/19/2004	SINGLE CRYSTAL SILICON PRODUCING METHOD, SINGLE CRYSTAL SILICON WAFER PRODUCING METHOD, SEED CRYSTAL FOR PRODUCING SINGLE CRYSTAL SILICON, SINGLE CRYSTAL SILICON INGOT, AND SINGLE CRYSTAL SILICON WAFER	TOMIOKA, JUNSUKE
10594175	Not Issued	30	09/26/2006	Semiconductor Single Crystal Manufacturing Apparatus and Graphite Crucible	TOMIOKA, JUNSUKE

Inventor Search Completed: No Records to Display.

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	<input type="text" value="tomioka"/>	<input type="text" value="Junsuke"/>	

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117/217, 218, 219, 222, 900

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219/426, 424

373/130

10/594, 175

Examiner's Name

(09/26/2006)

IDS statement, flagged on 11/29/2007

5,116,456
5,685,907

L1 S(single or mono) (8a) (crystal #)

L2 S(C2 or czochralski)

L3 S(plural? or multip?) (8a) (heater #)

L4 S(independent? or separat?) (8a) (control? or vary? or alter? or modify? or
S(heat? (8a) shield #) manipulated? or adjust?)

S(control? or vary? or manipulate? or alter? or adjust? or modify?) (8a) (resistance or
S(vertical?) resistance (8a) value

